

**REMARKS**

Claims 1 and 37-42 and 44-74 are currently pending in the application. Claims 1, 37, 49, 70, and 73-74 have been amended. Claim 43 has been canceled. Applicant respectfully submits that no new matter has been added. Reconsideration of the application as amended is respectfully requested.

Claims 1, 43, 54-56, and 73-74 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,481,262 to Urbas et al. ("Urbas") in view of U.S. Patent No. 5,451,958 to Schuermann ("Schuermann") and further in view of Japanese Patent Publication No. 1-298817 to Seiko (Seiko"). Claim 43 has been canceled, thus rendering the rejection thereof moot.

Independent claim 1 relates to a transceiver. Applicant respectfully submits that the cited references, even in combination, fail to disclose at least one of the distinguishing features of independent claim 1, namely, a single antenna adapted for simultaneously receiving a first signal and transmitting a second signal. In addition, the cited references fail to disclose a modulator disposed between the antenna and a signal processor for providing a fourth signal to the antenna for forming the second signal, the modulator varying an impedance between the antenna and the signal processor for providing the antenna with a simultaneous dual Q-factor, the Q factor being high for the first signal and low for the second signal.

Urbas discloses a passive transponder that includes a receive antenna 4 and a transmit antenna 11 (*See, e.g.,* Urbas, Figure 2). The Office Action concedes that Urbas fails to disclose a single antenna adapted for simultaneously receiving a first signal and transmitting a second signal as in claim 1. However, the Office Action asserts that Schuermann discloses these features. The Office Action states that Schuermann teaches "a single antenna adapted for simultaneously receiving a first signal and transmitting a second signal (see the single antenna 10 in fig. 1 and col. 2, lines 22-24 noting that the term full-duplex means simultaneously receiving a first signal and transmitting a second signal)". Applicant respectfully disagrees.

Applicant respectfully submits that Schuermann discloses an interrogator comprising *two* antennas. A *first* antenna for transmitting signals and a *second* antenna for receiving signals. In contrast, amended independent claim 1 discloses a *single* antenna adapted for simultaneously receiving a first signal and transmitting a second signal. Applicant respectfully submit that according to Schuermann, when power is transmitted, a Q factor for the first antenna for transmitting signals is high and when the power transmission is terminated, the Q factor is made low by connecting a damping resistor directly across the transmission antenna. A Q factor for the second antenna for receiving signals is permanently set to low and is fixed. Applicant respectfully submits that Schuermann discloses *two* antennas. Since, the Q factor of the first antenna for transmitting is *high* when transmitting and *low* when not transmitting while the Q factor for the second antenna for receiving signals is *fixed*, Applicant respectfully submits that Schuermann cannot disclose *a single antenna with a simultaneous* dual Q-factor as claimed in claim 1.

In addition, the Office Action concedes that the combination of Urbas and Schuermann fails to disclose a modulator, the modulator varying an impedance between an antenna and a signal processor for providing the antenna with a dual Q-factor, the Q-factor being high for the first signal and low for the second signal. However, the Office Action asserts that Seiko discloses these features. Applicant respectfully disagrees.

Applicant respectfully submits that Seiko fails to disclose that a single antenna is adapted to provide a *simultaneous* dual Q-factor, the Q-factor being high for the first signal and low for the second signal. Seiko's limited English language abstract appears to disclose a method for changing a Q factor of a squelch tone filter used in a transceiver. The Q factor is high when the transceiver is receiving signals and is low when the transceiver is transmitting signals. In contrast to claim 1, according to Seiko, the transceiver is either in a receiving state or transmitting state causing the squelch tone filter to *either* have a high Q factor or a low G factor. Seiko fails to disclose the *simultaneous* dual Q-factor operation as claimed in claim 1.

For at least the reasons set forth above, Applicant respectfully submits that claim 1 distinguishes over the cited references. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 1 be withdrawn.

Independent claim 54 recites, among other things, using a single antenna adapted for simultaneously receiving a first RF electromagnetic signal and transmitting a second RF electromagnetic signal and a modulator for providing a coil with a simultaneous dual Q-factor, the Q factor being high for a first current and low for a second current. Independent claims 73 and 74 each recite, among other things, a single antenna adapted for simultaneously receiving a first signal and transmitting a second signal and a modulator varying the impedance between the antenna and a signal processor for providing the antenna with a simultaneous dual Q-factor, the Q-factor being high for the first signal and low for the second signal. For similar reasons to those stated above with respect to independent claim 1, Applicant respectfully submits that each of independent claims 54 and 73-74 also distinguishes over the combination of Urbas, Schuermann, and Seiko. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 54 and 73-74 be withdrawn.

Dependent claims 55-56 depend from and further restrict independent claims 54 in a patentable sense. Applicant respectfully submits that, for at least the reasons set forth above with respect to the rejection of independent claim 54, dependent claims 55-56 distinguish over the cited combination of Urbas, Schuermann, and Seiko and are in condition for allowance. Withdrawal of the rejection of dependent claims 55-56 is respectfully requested.

Claims 37-42, 44-53, and 57-72 stand rejected under 35 U.S.C. § 103 as being unpatentable over Urbas in view of Schuermann. Independent claim 37 is directed to a transceiver. Applicant respectfully submits that the cited references, singularly or in combination, fail to disclose at least one of the distinguishing features of independent claim 37, namely, a single antenna adapted for simultaneously receiving a first RF electromagnetic signal and transmitting a second RF electromagnetic signal. In addition, the cited references fail to disclose a modulator for varying an impedance between the antenna and a signal processor, such that the antenna simultaneously has a high Q factor for signals received by the antenna and a low

Q factor for signals transmitted from the antenna. For similar reasons to those stated above with respect to independent claim 1, Applicant respectfully submits that independent claim 37 also distinguishes over the combination of Urbas and Schuermann. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 37 be withdrawn.

Dependent claims 38-42 and 44-48 depend from and further restrict independent claim 37 in a patentable sense. Applicant respectfully submits that, for at least the reasons set forth above with respect to the rejection of independent claim 37, dependent claims 38-42 and 44-48 distinguish over the cited combination of Urbas and Schuermann and are in condition for allowance. Withdrawal of the rejection of dependent claims 38-42 and 44-48 is respectfully requested.

Independent claims 49-50, 57, and 59-60 each recite, among other things, using a single antenna adapted for simultaneously receiving a first RF electromagnetic signal, transmitting a second RF electromagnetic signal, and a modulator disposed in series between the antenna and a signal processor. Neither Urbas or Schuermann, singularly or in combination, disclose a modulator disposed in series between the antenna and a signal processor. Additionally, for similar reasons to those stated above with respect to independent claims 1 and 37, respectively, Applicant respectfully submits that each of independent claims 49-50, 57, and 59-60 also distinguishes over the combination of Urbas and Schuermann. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 49-50, 57, and 59-60 be withdrawn.

Dependent claims 51-53, 58, and 61-69 depend from and further restrict independent claims 50, 57, and 60 in a patentable sense. Applicant respectfully submits that, for at least the reasons set forth above with respect to the rejection of independent claim 50, 57, and 60, respectively, dependent claims 51-53, 58, and 61-69 distinguish over the cited combination of Urbas and Schuermann and are in condition for allowance. Withdrawal of the rejection of dependent claims 51-53, 58, and 61-69 is respectfully requested.

Independent claim 70 is directed to a tuned antenna. The Office Action concedes that Urbas fails to disclose the feature of a capacitor connected in parallel with a coil for providing a resonant frequency at or about a first predetermined frequency. The Office Action asserts that

Schuermann teaches this feature. Applicant respectfully disagrees. Applicant respectfully submits that Schuermann also fails to teach or suggest this feature. The Office Action asserts that Urbas teaches the first and second signals referred to in claim 70 and that Schuermann teaches the third and fourth signals referred to in claim 70. Assuming, for the sake of argument, that the signals are in fact taught by Urbas and Schuermann, Applicant respectfully submits that having the capacitor in Schuermann provide a resonant frequency of the first predetermined frequency cannot be taught by Schuermann when Schuermann does not disclose the signal having the first predetermined frequency in the first place.

In addition, Applicant respectfully submits that that the cited references, singularly or in combination, fail to teach or suggest at least one additional distinguishing features of independent claim 70, namely, a single coil adapted for receiving a first RF electromagnetic signal and generating a second electromagnetic signal. For at least the reasons set forth above, Applicant respectfully submits that claim 70 distinguishes over the cited references. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 70 be withdrawn.

Independent claim 71 is directed to a method for receiving and transmitting a first radio frequency (RF) electromagnetic signal and a fourth RF electromagnetic signal respectively to and from a transceiver. Applicant respectfully submits that the cited references, singularly or in combination, fail to teach or suggest at least one of the distinguishing features of independent claim 71, namely, receiving the first signal with an antenna and, in response thereto, generating a second signal within the antenna. In addition, Applicant respectfully submits that the cited references, singularly or in combination, fail to teach the feature of tuning an antenna with tuning circuitry to have a resonant frequency at or about a first predetermined frequency. For similar reasons to those stated above with respect to independent claim 1, Applicant respectfully submits that independent claim 71 also distinguishes over the combination of Urbas and Schuermann. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 71 be withdrawn.

Independent claim 72 is directed to a method for receiving and transmitting a first radio frequency (RF) electromagnetic signal and a fourth RF electromagnetic signal respectively. Applicant respectfully submits that the cited references, singularly or in combination, fail to teach or suggest at least one of the distinguishing features of independent claim 72, namely,

receiving the first signal with a coil having a first predetermined frequency, generating a second electrical signal from the first signal, and wherein the coil receiving the first signal and the coil transmitting a fourth signal are the same coil. In addition, Applicant respectfully submits that the cited references, singularly or in combination, fail to teach the feature of connecting a capacitor in parallel with a coil for providing an antenna with a resonant frequency at or about the first predetermined frequency. For similar reasons to those stated above with respect to independent claim 1, Applicant respectfully submits that independent claim 72 also distinguishes over the combination of Urbas and Schuermann. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 72 be withdrawn.

In view of the above amendment, Applicant respectfully submits that the present application is in condition for allowance. A Notice to that effect is respectfully requested.

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Respectfully submitted,

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